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the proposal was Dr. Hart's, or he would not three times have said so. It clearly, then, could not have formed part of the paper actually read here on June 25, 1855,* as Dr. Hart only communicated the details to Mr. Mallet in July; and it is equally clear that Mr. Mallet's first suggestion to Government must have differed from that ultimately acted on.

With respect to M. Thiéry's plans, I will only quote some words I find at page 152 of Mr. Mallet's work on Artillery,—words written when Mr. Mallet was probably more cool than he is this evening :—

“Solid reinforce rings have been repeatedly proposed and frequently applied to various projects and forms of cannon, but the author believes that the peculiar advantages of their application in thin concentric lamina, the internal ones of which shall be compressed by an *initial extension* of the external ones, *have never before been distinctly pointed out*, and their adoption proposed and urged; the essential and radical distinction being this, that by no arrangement or variation of design can a gun be formed of a single ply of rings, whose strength to sustain an internal pressure shall be greater than the cohesive power of the material per square inch of section; whereas by the subdivision of the rings into a number of superimposed plies, *each compressing those within it*, the strength of the gun may be increased so as to bear an internal pressure any required number of times greater than the ultimate cohesive powers of the material, in fact, may be increased *ad infinitum*.”

I cannot believe, Sir, that this “essential and radical distinction” has disappeared since 1855. Indeed, M. Thiéry tried to make guns in the way he thought best, and failed utterly.

I will not follow Mr. Mallet on irrelevant questions. I regret much that I am obliged to take up your time at all in discussing what can be of so little interest.

The following donations of antiquities were presented to the Academy :—

By the Rev. W. Reeves, for the Rev. John Hamilton, a curious candlestick, found in a crannoge near Manorhamilton.

By the President, for Mr. Parke, of Dunally, a large cinerary urn, highly ornamented, found, with two others, near Ballymote, county of Sligo, in the year 1827.

MONDAY, JUNE 25, 1860.

JAMES HENTHORN TODD, D.D., President, in the Chair.

The PRESIDENT announced that the Academy was called upon that evening to elect a member of the Council, in consequence of the resignation of Mr. Haliday on the Committee of Antiquities. Ordinarily he

* This view is corroborated by what Mr. Jellett says, viz., that Mr. Mallet's original paper was not more than one-fifth part of the size of his published one.

did not make any observations on an occasion of this kind, but in the present instance he felt it to be his imperative duty to state to the Academy the facts of the case, because he had reason to think that there was some misapprehension on the subject. It was probably in the recollection of the Academy that the gentleman recommended to them by the Council was particularly mentioned in the Annual Report of the Council presented and adopted at the last Stated Meeting of the Academy, on the 16th of March last. He was then publicly thanked as having conferred special benefit on the Academy; but the reward he received for that benefit was, that at the very same meeting his name was struck off the Council. That was done, it was true, by a majority of one only; and no doubt there was some very great mistake on the subject in the minds of the members who were induced to vote against him. But, having reason to think that the same feelings still continued, he (the President) felt it his duty to state that the reason why the Council had recommended him to them for election now was their sense of the injustice done him on the 16th of March last. For himself, he (the President) had no hesitation in saying that, in his long experience as a Member of Council, and during his long official connexion with the Academy, he did not think that they ever had a more useful Member of the Council than that gentleman was. He would not occupy their time by any further remarks; but he would be wanting in his duty as President of that Academy if he did not express the very strongest disapproval of one of the means used to prejudice this election. It was not only unfair, but unconstitutional, and most injurious to the best interests of the Academy, to print anonymous letters in the newspapers against any particular individual, and that on the very morning of the election, when no reply could, in the nature of things, be made until it was too late. If there were any objection to the gentleman, let it be boldly stated before the Academy. That was the fair and honourable course; and the Academy, no doubt, would listen with great attention to anything which might be so advanced. But it was neither fair nor right for a Member of the Academy to impugn anonymously in a newspaper the motives of the Council in the recommendations which it was their duty to make to the Academy. It gave the public a wrong idea of the Academy, and lowered the Society in public respect. Who would wish to belong to any body whose practice it was to tolerate anonymous attacks in the newspapers upon its Members? He trusted the Academy would not tolerate such a practice; to do so would be suicidal. And, therefore, for himself, as the President of the Academy, he felt that he could not be silent on such an occasion as that. Let any Member who thought the Council to be in error in the recommendation they had made, stand up there in his place and say so. An explanation might then be given, and the truth brought forth; it was only fair and just to hear both sides; but an anonymous attack was never fair or just: it was stabbing an adversary from behind, and in the dark.

William Henry Hardinge, Esq., was elected a Member of the Committee of Antiquities in the room of Charles Haliday, Esq., who had resigned his place on that Committee.

PROFESSOR JELLETT read to the meeting the following paper, describing—

A NEW ANALYZING PRISM.

IN determining the plane of polarization of a ray by means of the ordinary Nicols' prism, the observer is required to arrest the rotation of the prism at the point at which the intensity of the transmitted light is a *minimum*. But it is difficult to do this with very great accuracy, inasmuch as the observer is obliged to compare a shade of colour, not with any other shade which is before his eyes at the same instant, but with his recollection of a shade observed at the previous instant. To insure any tolerable degree of accuracy, the observation must be made very rapidly, so that the eye may receive the new impression while the former one is still quite fresh in the memory. The difficulty of doing this with accuracy in any case is obvious, but it is most felt in experimenting on light reflected or transmitted by fluids. For here it is impossible to touch the instrument without producing a tremulous motion in the fluid, and, therefore, in the image reflected or transmitted; and this motion, while it lasts, renders accurate observation very difficult. But if the rotation of the analyzing prism be stopped for a sufficient length of time to allow this motion to cease, the recollection of the previously existing tint will no longer be so fresh as to allow the comparison to be made with any very great exactness. The difficulty will be increased, as is easily seen, when there is any amount of elliptic polarization in the light which is to be examined.

The remedy for this difficulty is to be sought in the construction of an analyzer in which the tints compared shall be *simultaneous*, not consecutive, and the double quartz plate of M. Arago is an attempt to realize this conception. It is not necessary to examine particularly this instrument, which is wholly different in principle and (the author believes) very inferior in accuracy to that which is now laid before the Academy, and which is constructed as follows:—

A rhombic prism of Iceland spar, whose longitudinal edges should have a length of about two inches, or a little more, is cut by two planes perpendicular to those edges, so as to form a right prism, as in Fig. 1. This prism is divided by a plane parallel to the edges, and making a small angle with the longer diagonal of the base; one of the two parts into which the prism is thus divided is then reversed, so as to place the base uppermost; the

Fig. 1.